

401 KAR 8:100. Design, construction and approval of facilities.

RELATES TO: KRS Chapter 224, 40 C.F.R. Part 141 (1995)

STATUTORY AUTHORITY: KRS 224.10-100, 224.10-110, 40 C.F.R. Part 141 (1995), 42 U.S.C. A 300f, 300g, 300j

NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-110 directs the cabinet to enforce administrative regulations adopted by the secretary for the regulation and control of the purification of water for public and semipublic use. The Safe Drinking Water Act, as amended by the Safe Drinking Water Act Amendments of 1986, provides for primary enforcement responsibility by states that have adopted regulations "no less stringent than the national primary drinking water regulations", as well as meeting other criteria stipulated by the Act. The Commonwealth of Kentucky has accepted and is currently exercising this primary enforcement responsibility. This administrative regulation sets out design plan requirements for the construction of new and expanded facilities that deliver pure water for public or semipublic use, as well as stipulating certain reporting requirements and requiring modifications to existing facilities for certain line replacements, and feeding activated carbon. There is no federal regulation that deals with this subject matter, therefore, this administrative regulation is no more stringent than the federal regulation. The plans review process specified in this administrative regulation allows plans to be reviewed and certain judgments to be made about water systems to ensure that other state and federal requirements are being met.

Section 1. Plans and Specifications. (1) Plans to be submitted. Before a supplier or potential supplier of water may enter into a financial commitment for or initiate construction of a new public water system, or increase the capacity of an existing public water system, he shall submit the preliminary plans to the cabinet. An applicant shall demonstrate to the cabinet evidence of efforts to avoid locating part or all of the new or expanded facility at a site which is subject to a significant risk from earthquakes, floods, fires or other disasters which could cause a breakdown of the public water system or a portion thereof. Except for the intake structure, the facility shall be out of the 100-year flood plain.

(2) Preliminary information. The following information shall be submitted to the cabinet by a professional engineer on behalf of the applicant along with the fee required by 401 KAR 8:050, Section 1(1):

- (a) The names of the applicant and the owner of the plant;
- (b) A United States Geological Survey quadrangle map which shows the location of the proposed facility;
- (c) The proposed source of water and quantity available, with the location of the intake or wellhead identified by latitude and longitude in degrees, minutes and seconds;
- (d) An analysis of the water from the proposed source, which covers all regulated parameters, performed by a laboratory certified by the cabinet or its authorized agent;
- (e) A description of the proposed facility, including size, flow rate through filters, settling basin size, and other general criteria; and
- (f) An operation plan, including anticipated load, hours of operation, area served and the name of the plant operator.

(3) Preliminary plans approval. Upon receipt and review of the preliminary plans, as set forth in subsection (1) of this section, the cabinet shall either approve the preliminary plans or return them to the supplier of water for revision. Approval of the preliminary plans signifies approval only of the concept described in the preliminary plans and does not alter in any way the responsibility of the supplier of water to submit complete plans and specifications to the cabinet for final approval. The facility shall comply with the approved preliminary plans. Any change in the final design from the concept set forth in the preliminary plans shall be approved prior to its incorporation in the final plans and specifications.

(4) Preliminary plans for semipublic treatment facilities or distribution systems. Preliminary plans are not required by the cabinet for semipublic treatment facilities or for distribution system construction, extensions or improvements.

(5) Final plans and specifications for water treatment plants and distribution facilities.

(a) Plans for the construction or modification of public water systems shall be submitted by the water system or shall be accompanied by a letter from the water system confirming that it has reviewed the plans, accepts the design and can and will provide water service to the project. Public water systems which purchase water from another public water system, shall also submit a letter from the seller of water for all construction or modification projects if: the project will result in exceeding eighty-five (85) percent of the purchasers current purchase contract; or the project could result in a pressure reduction below thirty-five (35) pounds per square inch in either the purchaser's or the seller's system; or, the project will result in a demand for water by the purchaser in excess of a 10,000 gallon per day increase. This requirement may be waived by the cabinet if the purchaser shows that a reasonable attempt to obtain the letter has been made and the seller of water fails to provide the required letter. This provision shall not be the sole justification for rejection of the proposed project. The intent is to alert the seller and the purchaser that they are approaching their water purchase contract limitations and the state standards on minimum water pressure.

(b) Plans and specifications for all public water systems shall be prepared and submitted to the cabinet by a professional engineer registered in Kentucky, and shall bear the engineer's seal. The seal of a professional engineer is not required on plans and specifications for semipublic water supplies, or for public water supply projects in which the expenditure for the completed project does not exceed \$2,000. The construction or installation of any new facilities or works or the alteration or reconstruction of any existing facilities or works, in any public or semipublic water system, shall not begin until four (4) copies of the plans and specifications, or any changes thereto, together with design data as may be required for proper review of the plans, have been submitted to the cabinet and have been approved by the cabinet in writing. A complete package, including plans, specifications, necessary fees, letters and other information, shall be submitted in the form and content as may be specified by the cabinet, and shall be submitted at least thirty (30) days prior to the date on which action is requested of the cabinet. The front page of the plans shall contain the name of the water supply, its ownership, location by city and county, and the name of the person preparing the plans.

(c) The cabinet's review of plans shall be limited to sanitary features of design and other features of public health significance and shall not include an examination of structural, mechanical or electrical design or economic factors.

(d) The plans shall be drawn to scale and accompanied by proper specifications, so as to permit a comprehensive engineering review, and shall include, but not be limited to, the following:

1. If treatment facilities are involved, chemical analyses of the proposed raw water source or sources shall be performed and evaluated before final approval is granted;

2. A plan and sectional view with all necessary dimensions of the water treatment facilities;

3. A piping diagram showing all appurtenances, including treatment facilities, in sufficient detail, as well as pertinent elevation data, to permit a hydraulic analysis of the system; and

4. Specifications containing details on all treatment equipment, including catalog identification of pumps, chlorinators, chemical feeders and related equipment.

5. A capacity to feed activated carbon shall be a part of the design for a new community or nontransient noncommunity surface water system.

6. A plan for a water line that would propose a section of line be laid within a 200 foot radius of an underground storage tank as defined in KRS 224.60-100 or a petroleum storage tank as defined in KRS 224.60-115, shall provide that all water lines within the 200 foot radius shall be ductile iron pipe or other nonpermeable pipe approved by the cabinet. Any future replacement of an existing water line within a 200 foot radius of a storage tank, whether or not plans are

submitted to the cabinet, shall also meet this requirement. The requirements of this subparagraph may be waived, in writing, if the public water system shows to the satisfaction of the cabinet, that the protection afforded by nonpermeable material is unnecessary due to hydrological, geological, or other physical conditions at a particular site.

(6) Approval of final plans. If approved, one (1) set of plans and specifications stamped "approved" will be returned to the engineer or person who prepared them and one (1) set will be returned to the water supply.

(7) Construction.

(a) During construction, a set of approved plans and specifications shall be available at the job site at all times. All work shall be performed in accordance with the approved plans and specifications.

(b) If the cabinet's representative observes work being performed in a manner which does not conform to the approved plans and specifications, the cabinet shall notify the owner in writing.

(8) Final approval of facility. Upon completion of construction, the person who presented the plans shall certify in writing that the project has been completed in accordance with the "approved" plans and specifications. The public water supply shall operate the facility consistent with the approved plans and specifications. Any proposed change to the approved plan shall be submitted to the cabinet for approval. The public water supply shall not implement any change to the approved plan without the prior written approval of the cabinet.

(9) Expiration of approval. Unless construction is begun within one (1) year from date of approval, the approval shall expire. Extension of approval may be granted upon written request to the cabinet.

(10) Modifications and extension of service. The cabinet may refuse to approve modifications of a public water system or an extension of service to one (1) or more customers if the modification or extension of service may result in the water system's inability to supply consistent water service in compliance with 401 KAR 8:010 through 8:600 inclusive.

(11) All plans and specifications submitted pursuant to this administrative regulation shall be consistent with "Recommended Standards for Water Works", "General Design Criteria for Surface and Groundwater Supplies", and "Water Policy Memorandum Number 84-02, General Guidelines for Conducting Stream Studies for Wastewater Discharges Proposed Within Five Miles Upstream from Public Water Supply Sources, or for the Location of Public Water Supply Intakes Within Five Miles Downstream from Wastewater Discharges", which are incorporated by reference in Section 4 of this administrative regulation.

Section 2. Treatment Techniques for New and Existing Systems. (1) General requirements. The requirements of this section constitute primary drinking water regulations. These administrative regulations establish treatment techniques in lieu of maximum contaminant levels for specified contaminants.

(2) Treatment techniques for acrylamide and epichlorohydrin. Each public water system shall certify annually in writing to the cabinet, using third party or manufacturer's certification, that when acrylamide and epichlorohydrin are used in drinking water systems, the combination or product of dose and monomer level does not exceed the levels specified as follows:

Acrylamide = 0.05 percent dosed at one (1) ppm (or equivalent);

Epichlorohydrin = 0.01 percent dosed at twenty (20) ppm (or equivalent).

Certifications may rely on manufacturers or third parties, as approved by the cabinet.

Section 3. All existing community and nontransient noncommunity water systems using surface water as a source shall, by January 1, 1995, submit to the cabinet for approval plans to establish the capacity to feed activated carbon to the treatment system. Within twelve (12) months of the approval of the plans, the water system shall certify in writing to the cabinet that the approved plan has been implemented.

Section 4. The following documents are hereby incorporated by reference and are available for public inspection and copying, subject to copyright laws, between 8 a.m. and 4:30 p.m., Monday through Friday, except for state holidays, at the Division of Water, 14 Reilly Road, Frankfort Office Park, Frankfort, Kentucky 40601:

(1) Great Lakes Upper Mississippi River Board of State Public Health & Environmental Managers "Recommended Standards for Water Works," 1992, published by and available from Health Research Inc., Health Education Services Division, P.O. Box 7126, Albany, New York 12224.

(2) "General Design Criteria for Surface and Ground Water Supplies", July 1990, which is published by and may be obtained from the Division of Water; and

(3) "Water Policy Memorandum number 84-02, General Guidelines for Conducting Stream Studies for Wastewater Discharges Proposed within Five Miles Upstream from Public Water Supply Sources, or for the Location of Public Water Supply Intakes within Five Miles Downstream from Wastewater Discharges", 1984, which is published by and may be obtained from the Division of Water. (17 Ky.R. 609; Am. 1437; 1715; 1977; eff. 11-15-90; 20 Ky.R. 3037; 21 Ky.R. 316; eff. 7-27-94; 23 Ky.R. 2560; eff. 5-14-97.)